1: Gifford E-4,5 (1920-1921) 1929 009 Tonga 009

Coiled baskets (*katoalu*) are made by women, but never for their own use. Most of them are intended as gifts to a chief or for presents at weddings, funerals, or similar occasions. The basket may be used by the recipient, but many baskets, particularly openwork baskets, seem to be put to no practical use.

Wooden bowls were made by men who probably were *tufunga langafale*.

Tongan medical treatment is a mixture of magic and herb doctoring. (See page 338.) Most of the doctors are commoners, and may be either male or female (*tangata faitoo* or *fefine faitoo*). They are not appointed by chiefs, but usually follow the practice of a parent, thus keeping the knowledge a secret within the family. Payment (*tukutoo*) is made after a cure, in the form of a feast, during which valuable articles (*koloa*, wealth) such as tapa and mats are placed in front of the doctor. The supercisor of boys was termed *faikaukau* of *faitefe*. (See p. 188.)

While barbers, according to Mariner, might be either men or women, most of them are said to have been women. Women of chiefly rank could serve as barbers for chiefs.

TITLES OF MATAPULES AND ARTISANS

The following list includes the matapule titles which I have recorded, together with the origin of each title and the relationships of the incumbents so far as known. The titles of artisans are included, though all of them may not be strictly matapule titles. (See p. 144.)

Afeaki, matapule to the Tui Kanokupolu. Resides in Haapai.

Afu Haa Laufuli, a matapule of the Haa Molofaha, serving the Tui Kanokupolu; resides in Vavau. Anciently he was matapule to the Tui Haa Takalaua and had a house at Fonuamotu, Tongatabu, the residence of the Tui Haa Takalaua.

Afu Haa Mango, a matapule. Residence Okoa Island, Vavau.

Ahomee, a carpenter (*tufunga fale*) appointed by the chief Ahomee in whose *tofia* at Utui, Vavau, he lives. He was preceded in title by his father and his father's father. The present holder of the title is said to be a younger brother of the chief Ahomee.

Akauola, the *toutai* (navigator) of the king of Tonga. A member of the Haa Toutai. He is said to be of Samoan descent, the Samoan form of his title being Laauola. Akauola and Moala are related.

Angakehe, a matapule in the village of Uiha, Uiha Island, Haapai, serving the chief Malupo of that place.

Faingaa, a *toutai ika* (fisherman) of Talau, Vavau Island. Perhaps this is one of the Falefa matapules, for his partner is Mapu, as with Falefa matapules.

Fakatea, ruler of Vavau displaced by Tuituiohu, the "governor" sent there by the Tui Tonga Pau. Fakatea is said to have been only a matapule.

Fakatulolo, also called Lutui and Fokololo. A matapule of the Haa Toutai, now serving the Tui Kanokupolu, but formerly serving the Tui Haa Takalaua. The first incumbent is said to have come from the Tokelau Islands. Fokololo is the name of the garment worn by people when going into the sea. The first Fakatulolo of whom I have record was succeeded by his son Siu, who was succeeded by his daughter's son Tukia, who was succeeded by his brother Ngongo. A Fakatulolo died August 5, 1897.

3: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

The remaining professions are followed both by mooas and tooas, with the exception of the three following, viz. *toofoonga fy cava* (barbers or shavers with shells), *tangata fe oomoo* (cooks), and *ky fonnooa* (peasants), all of whom are tooas.

Of the different professions, some are hereditary in the way before mentioned, and some are not; the latter consist of *toofoonga ta tattow* (those who perform the tattow), *toofoonga tongi acow* (club carvers, or engravers of the handle, not inlayers); and *toofoonga fy cava* (barbers). The arts followed by these are not hereditary, for they are not of that respectability to engage a man to follow any of them because his father did the same: they are practised by any one who has a natural turn that way.

But the two lowest of all, viz. the cooks and peasants, are such by inheritance, for the chiefs in whose service they may be necessarily require their services, and their children naturally succeed them, for neither of these arts require any great talent to learn; every body knows how to cook and till the ground in a tolerable degree; but those who are born to no better fate have no alternative left them, they must follow these necessary employments as the business of their life, if their chiefs command them; and to such alone the terms cook and peasants are here applied. The cook is some-

3: Mariner F-5 (1806-1810) 1818
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Hereditary.	*Toofoonga fo váca*; canoe-builders.	Followed both by *matabooles* and *mooas*.	555
	Toofoonga fono le; cutters of whale-teeth ornaments.		461
	Toofoonga taboo; superintendants of funeral rites.		565
	Toofoonga ta maca; stone-masons, or makers of stone vaults.	Followed both by *mooas* and *tooas*.	396
	Toofoonga jia cobenga; net-makers.		306
	Toofoonga toty ica; fishermen.		767
	Toofoonga langafalle; large house-builders.		324
Hereditary or not.	*Toofoonga ta tattow*; those who perform the tattow.		286
	Toofoonga tongi acow; club-carvers.		226
	Toofoonga fy cava: barbers or shavers with shells.	Followed only by *tooas*.	331
Hereditary.	*Tangata fe oomoo*; cooks.		305
	Ky fannooa; peasants.		322
			306
			252
			241

Property in these islands, as may easily be conjectured, consists principally in plantations, houses, and canoes, and the right of succession to it is regulated by the order of relationship, as given under the head of Nobles, p. 88, so in like manner is the right of succession to the throne. 421 428

Having now given a view of the rank of individuals in society, with reference to religion, civil government, and professional occupations; we have now to consider it in respect to old age, sex, and childhood. 128

Old persons of both sexes are highly reve- 888

3: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

Too'i Bolo'too; literally, *chief of Bolotoo.* This and the three following gods are all minor gods of the sea and of voyages, and protectors of Finow's family. Notwithstanding his name, he is inferior to all the gods mentioned before him; but much upon an equality with the three following. He has two houses dedicated to him at Vavaoo, and one at Lefooga; none elsewhere that Mr. Mariner knew of: he has, perhaps, two or three priests.

Ha'la A'pi A'pi; literally, *a road crowded.* He has the same attributes as Tooi Bolotoo. Mr. Mariner knows of no house dedicated to him. He has one priest.

To'gi Oocumme'a; literally, *an iron axe.* The same attributes as the above.

Toobo' Boo'goo; literally, *Toobo the Short.* The same attributes as the above.

Tangalo'a; god of artificers and the arts: doubtful if he has any house dedicated to him: has several priests, who are all carpenters. It was this god that brought the Tonga islands from the bottom of the sea, whilst fishing.

Such are the names and attributes of the chief primitive gods; next to those in rank and power come the souls of nobles.

Souls of Egies, or Nobles: of these there must be a vast number. Their attributes are similar to those of the primitive chief gods:

3: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

to sea, and returned to the Fiji islands to lay in a second cargo.

The Fiji islanders make their canoes principally of a hard firm wood, called *fehi*, which is not liable to become worm-eaten; and as the Tonga islands do not produce this wood, the natives are not able to build canoes so large or so strong as those of their instructors: all their large canoes, therefore, are either purchased or taken by force from the natives of Fiji. The natives of Tonga take the greatest pains with their canoes, polishing them with pumice-stone, and paying every attention that they are not more exposed to the weather than is absolutely necessary. The canoes of the Navigator's islands are similar to those which were formerly in use at Tonga, but the natives of those islands never venture to the latter place but in canoes manned with Tonga people.

Fono le, carving ornaments out of whales teeth, for the neck, and inlaying clubs, &c. with the same material. This art, as far as it regards ornaments for the neck, is of Fiji origin; but inlaying clubs, wooden pillows, &c. is their own invention. An account of the ornaments for the neck has already been given, (Vol. I. p. 299.) They inlay their clubs with extraordinary neatness, considering the rude tool they employ, which is generally a *togi* (or small adze), made out of an European chisel, a piece of an old saw,

3: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

322 531 [412] [552] or even a flattened nail, to which a handle is affixed. They only ornament those clubs which are considered good on account of their form, or the quality of the wood, or those which have done much execution: to the latter it used to be the custom to give a proper name. Those that make these ornaments are chiefly canoe-builders.

767 565 TOOFOONGA TA'BOO, superintendants of funeral rites: these, as the name indicates, have the regulation of every thing regarding burials of principal chiefs: they are generally mata-booles, and are always consulted respecting the preparations and forms of ceremony necessary on such occasions, and which are handed down by them from father to son.

324 764 TOOFOONGA TA MA'CCA, or makers of stone vaults for the burial of chiefs. The general form of these vaults has been already described, (Vol. I. p. 144.) The stones used for this purpose are about a foot in thickness, and are cut of the requisite dimensions, out of the stratum found on the beaches of some of the islands.

286 JIA COBE'NGA, net-making. This art is performed exactly in the same way as with us: the thread is made of the inner bark of a tree, which they call *olongá:* large nets, however, are made of plait, formed from the husk of the cocoa-nut.

226 TOOFOONGA TOTY'ICA, fishermen. All those

3: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

342 ground, being raised about a foot, is beaten
352 down hard, and covered with leaves of the cocoa-nut tree, dried grass, or leaves of the ifi tree: over this is laid a bleached matting, made of the young leaves of the cocoa-nut tree.

342 The house consists, as it were, but of one
353 apartment, but which is subdivided occasionally by screens about six or eight feet high. In case of rain, or at night, if the weather is cool, they let down a sort of blind, which is attached to the eaves of the open sides of the house: these blinds are made of long mats, about six inches in width, one above another, and rather overlapping, and are so contrived as to draw up by means of strings, like our Venetian blinds, and are then concealed just within the eaves. The common houses have not these blinds, but, in place of them, a few mats hung up as occasion may require.

304 Ta tattów, striking the tattow. This
305 operation has already been described in the last
643 chapter, and nothing farther is here to be said,
648 except that Tooitonga is never tattowed at the Tonga islands; for it is not considered respectful to put so high a chief to so much pain, and if, therefore, he wishes to undergo this operation, he must visit Hamoa, (the Navigator's islands), for that purpose.

322 Tongi aco'w, club carving or engraving.
531

3: Mariner F-5 (1806-1810) 1818
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Formerly the whole of the clubs used to be engraved, but now this ornamental work is confined to the handle: it is executed with a great deal of neatness. A shark's tooth used to be the instrument, but now they make a sort of graver out of a nail flattened, sharpened, and fixed in a handle. Instances of their neatness in this sort of workmanship may be seen in our museums, and in the engraved representations of other works.

Fy cava, shaving the beard. They have two modes of performing this operation, viz. with the two valves of a certain kind of shell, which they call *bi'bi*, and with pumice-stone: the latter is used by the party himself who requires the operation; the former by those whose profession it is to shave others. The edge of one valve being pressed horizontally against the chin or lip by the left hand, that portion of the beard which appears upon it is rubbed or filed off by the rough back of the other valve. This operation is generally performed once in about eight or ten days. The heads of infants are always kept closely shaved; but this is done with a shark's tooth by the mother.

Fe oomoo, the art of cooking. If refinement in cookery be one proof of the civilization of a people, the natives of the South Seas have

16: Collocott M-5 (no date) 1921 OU9 Tonga OU9

Tangaloa the Craftsman would seem to be the especially representative type, as Tangaloa was the god of carpenters, who before eating used to throw a small piece upwards, saying, "for Tangaloa." The plover is sacred to him, that being the shape in which he visited earth, Tangaloa Atulongolongo being the member of the family spoken of as paying such visits.

The Maui, too, are regarded as a group rather than as a single god. The stories mention Maui-loa (Long Maui), Maui Buku (Short Maui), and Maui Atalanga, who is the father of Maui Kijikiji, the most famous of the Maui, noted for his mischievous disposition, for his immense strength, and for the priceless boon he bestowed on mortals in stealing fire from the Underworld and bringing it up to earth. His father Atalanga, too, performed the signal service of thrusting the sky up high above the earth. Previously men had to go on all fours like the beasts, but as the price of a drink of water which he begged from a woman in Vavau he raised the sky to its present elevation. Atalanga is associated with Kijikiji, but always in a subordinate role, in a number of exploits which rid the world of certain dangerous animals and plants, especially notable being the great man-eating dog of Fiji. This feat is also credited to the hero Muni of the Torn-eye. Muni's mother was thrown into the sea before his birth, and the child was cast ashore on the island of Lofanga in Haapai, where a plover pecked at his eye as he lay on the beach. Hence the sobriquet of Torn-eye. In the case of both Maui's and Muni's adventure with the man-eating dog, the hero slays the monster and then dies himself; Maui in grief that the beast had devoured his father, and Muni because this fate had overtaken his devoted Fijian henchman. The bones of the Maui, father and son, became the father, by a Fijian woman, Sinailele, of a still mightier hero, Tui-motuliki, who came to Tonga, and was the progenitor of a line of gentry in attendance on the Tui Tonga. Legend mentions also another Maui, Maui Motua (Old Maui), who appears as the father of Maui Atalanga, and the guardian of the fire stolen by Kijikiji from the Underworld.

Between Hikuleo, Tangaloa, and Maui were divided Bulotu, Sky, and Underworld. Hikuleo received as her portion Bulotu (the Polynesian Paradise), abode of the souls of chiefs and great people. To Tangaloa was assigned the Sky, and to Maui the Underworld. To the fourth pair of the original twins, Hemoana and Lube, were given the Sea and the Land and Forests. Hikulea was bound by a great cord, one end being held by the Tangaloa in the sky, and the other by the Maui in the Underworld. The earth would have been destroyed by a visit from her, hence the precautions to keep her at home.

Especially connected with the Tangaloa is the plover, and embodied in this bird one of them was wont to visit the earth. His visits commenced before the creation of the islands known to the Tongans.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

pleas'd with hearing the Heeva of our two young New Zeelanders (from this change) which consists rather in mere strength than melody of expression.

Their weapons are clubs & spears which cost them a good deal of time & labour, the first being made of a solid piece of hard heavy wood either black or brown, but chiefly that of the E'tôâ tree. They are of various shapes but that they seem fondest of, & which they always us'd in their public diversions, is one shap'd like a lance at the blade but a good deal broader in the middle.[1] These are commonly plain, but a great number of the others which are somewhat quadrangular (except the handle) and broadest at the point are entirely carv'd in that part with lines, little triangles & other figures, sometimes with great nicety, and they frequently venture to make likenesses of Fish, Birds & men fighting but are poor imitators in that respect. The spears are made likewise of a hard brown or black wood (though sometimes from the Cocoa tree) from five & six to twelve feet long or more, generally simply pointed but sometimes beset all round with the ragged bones of the stingrays tail for a foot at the point. They also make bows and arrows, the first near six feet long, slender and neatly made with a groove for the reception of the arrow on its back part. The last are almost as long, being only a reed with a blunt wooden point which they only use to shoot birds with, but what is a little uncommon the bow is bent and drawn contrary to the direction of its natural curve. The stools are about two feet long but only four or five inches high and near four broad, bending downwards in the middle with four strong legs & circular feet, the whole made of one piece of black or brown wood neatly polishd & sometimes inlaid with bits of ivory. They also inlay the handles of fly flaps with ivory[2] after being neatly carv'd, and make small figures of men, birds and other things from bone, which must be very difficult as their carving instrument is only a Sharks tooth.

The floors of their houses are always coverd with a very coarse kind of matt made from the Cocoa leaf as taken from the tree without any preparation. They sit upon these cross legg'd, a posture they are so accustom'd to that they cannot do the smallest thing without being in it. The better sort have often a finer matt to sit on, & the same is us'd as a bed with a stool under their heads when they go to sleep and a covering of the pieces of cloth they wear. Men, women & children lye in the same place without seperation, unless a few who have a

[1] The foregoing sentence seems to be describing a spear, *tao*, the next one the clubs, *ekau*, even though in the one next succeeding Anderson reverts to spears. Both were made of Toa, *Casuarina equisetifolia*.

[2] Again whale tooth ivory, Tongan *lei*.

[455 cont.]
175 We likewise
534 found a new musical instrument, consisting of eight, nine, or ten
[283] slender reeds, about nine inches long, joined to each other by some fibres of coco-nut core. The length of its reeds [456] seldom varied much, and the long and short ones were placed promiscuously; a notch was formed at the top of each, and the method of playing was only to slide the instrument backwards and forwards along the lips. It had commonly not above four or five different notes, and we never
[171] met with one which included a whole octave. Its resemblance to the syrinx, or Pan's flute of the civilized Greeks, dignified it much
175 more than any music which it contained. From the method of playing
533 it, the lovers of music will easily conceive that this divine art
[184] is entirely in its infancy among the inhabitants. The vocal part, which is the same as we had already observed it at Ea-oowhe, is very far from being unharmonious, and the women beat time to it by snapping their fingers very exactly; but its whole extent is only of
175 four notes, and therefore cannot admit of any variety. They had like-
534 wise a flute of a bamboo-reed, nearly of the thickness of a German
171 flute, which they played with the nostrils, like the Taheitians.
175 They commonly had ornamented it with various little figures, burnt
53 in, and pierced four or five holes in it, whereas the Taheitian flute
322 had but three in all. The method of ornamenting wood by burning
[534] [171] figures into it, was frequently observed in their bowls and various
[415] other utensils.

175 It was near sun-set when we returned on board with our collection,
609 and found the vessels still surrounded by many canoes, and the natives
[831] swimming about extremely [457] vociferous. Among them were a considerable
[171] number of women, who wantoned in the water like amphibious creatures,

76: Yuncker N-4,5 (1953) 1959 U9 Tonga OU9

Genus Albizzia Durazzini

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Albizzia lebbeck (Linnaeus) Bentham, Hook. London Jour. Bot. 3: 87, 1844.

Tree, up to 8 or 12 m. tall. Leaves alternate, bipinnate, pinnae about six, up to 15 cm. long, leaflets six to eight, oblong, obtuse, base obtuse, asymmetrical, variable in size, up to 3-5 cm. long, subsessile, glabrous. Flowers yellowish, in headlike clusters up to 4 cm. in diameter; pods oblong, up to 20 cm. long and 3 cm. wide, flat, reticulate, impressed opposite seeds.

Tongatapu: in yard, Ma'ofanga, Nov. 23, 1951, *Hürlimann 321.*

Infrequent as a cultivated tree. A native of tropical Asia and Africa, now widely cultivated and naturalized.

Tongan name: *kasia.*

The timber is used for a variety of purposes.

313
824

Genus Acacia Willdenow

Acacia simplicifolia (Linnaeus f.) Druce, Bot. Exch. Cl. Brit. Isles, Rept. 4: 602, 1917.

Tree, up to 6-8 m. tall, glabrous. Leaves alternate, broadly elliptical or subovate, obtuse, base cuneate-decurrent, parallel-nerved, up to 10-12 cm. long and 8 cm. wide, petiole less than 1 cm. long, winged by decurrent blade margins. Flowers small, yellow, in axillary, headlike clusters 1 cm. or less in diameter; pods up to 12 cm. or more long, somewhat constricted between seeds.

Tongatapu: *Cook; Home;* in strand thicket along road to east of Nuku-'alofa, Feb. 27, 1953, *Yuncker 15100.*

'Eua: *Lister;* seaward margin of strand thicket, Ha'aluma, Apr. 1, 1953, *Yuncker 15590.*

Nomuka: in strand thicket above village, Apr. 30, 1953, *Yuncker 15866.*

Lifuka: along beach toward northern end of island, Apr. 25, 1953, *Yuncker 15745.*

Vava'u: *Crosby.*

Niuatoputapu: near shore at Hihifo, Dec. 6, 1951, *Hürlimann 370.*

A frequent strand species throughout Tonga, Samoa, Fiji, New Hebrides, and New Caledonia.

A. laurifolia Willd. in Hemsley's and Burkill's lists.

Tongan name: *tetangia.*

The wood is used in handicraft work.

313
322
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Genus Leucaena Bentham

Leucaena glauca (Linnaeus) Bentham, Jour. Bot. Hook. 4: 416, 1842.

Shrub or small tree, up to 5 or 6 m. tall, young growth puberulent. Leaves alternate, bipinnate, with five or six pairs of pinnae, leaflets numerous, oblong, acute, asymmetrical, sessile, 6-12 mm. long and about 2 mm. wide. Flowers small, white, in globose, headlike, axillary clusters, about 2.5 cm. in diameter, peduncle up to 4 or 5 cm. long; pods thin, flat, up to 15 cm. long and 1.5 cm. wide, seeds small, brown.

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

137 Tongatapu: in thicket near sea, Sopu, Feb. 25, 1953, *Yuncker 15013.*

'Eua: in thicket northeast of Ohonua village, Apr. 2, 1953, *Yuncker 15625.*

Nomuka: in thicket on seaward side of road encircling island, Apr. 30, 1953, *Yuncker 15851.*

Vava'u: forming a large colony on seaside cliff along trail to Talau, west of Neiafu, May 23, 1953, *Yuncker 16145.*

Frequent throughout Tonga. A tropical American plant now of pantropic distribution.

Tongan name: *siale mohemohe.*

The timber is used for posts and in house construction.

Leucaena insularum (Guillemin) Daniker, Nat. Ges. Zürich, Vierteljahrschr. 77: Beibl. 19, 176, 1932.

Small tree, up to 5 m. or more tall, the young growth puberulent. Leaves alternate, bipinnate with eight or more pairs of pinnae, leaflets oblong, 45 or more on each pinna, acutish, obliquely inequilateral, up to about 7 mm. long, sessile. Flowers very small, pale pink, in globose, headlike, axillary, pedunculate clusters, peduncles up to 2 cm. or more long; pods slightly curved, up to 10 cm. or more long and 2 cm. wide.

Tongatapu: *Cook;* at shore north of Hofoa, Oct. 30, 1951, *Hürlimann 92;* near beach below Niutoua village, Mar. 2, 1953, *Yuncker 15108.*

'Eua: forming dense thicket along strand short distance above high-tide limit, Lokupo, Mar. 27, 1953, *Yuncker 15532.*

Lifuka: in thicket near beach at southern end of island, Apr. 28, 1953, *Yuncker 15791.*

Rather frequent throughout Tonga. Fiji, Niue, and New Caledonia.

L. forsteri Benth. in Hemsley's list.

Tongan names: *feifai, mohemohe.*

The timber is used in handicraft work.

Genus **Mimosa** Linnaeus

Mimosa pudica Linnaeus, Sp. Pl., 518, 1753.

Low, decumbent, subwoody, loosely branching, prickly plant. Leaves bipinnate, pinnae usually in one or two pairs, each with 15 or more pairs of linear-oblong leaflets up to 8 mm. or more long, acute, asymmetrical, sessile, sensitive. Flowers small, in globose, rose-pink, headlike, pedunculate, axillary clusters; the pod flat, thin, 1-2 cm. long, bristly.

Tongatapu: in waste area near Nualei, Oct. 29, 1951, *Hürlimann 45;* in grassy area near Niutoua village, Mar. 2, 1953, *Yuncker 15158.*

'Eua: *Lister.*

Vava'u: *Harvey, Crosby.*

A common weed in plantations, grazing areas and waste areas throughout Tonga. An American species now pantropic in distribution.

Tongan name: *mateloi.*

1 /Leucaena glauca -- Analyst/

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

Genus **Adenanthera** Linnaeus

Adenanthera pavonina Linnaeus, Sp. Pl., 384, 1753.

Medium to large tree. Leaves bipinnate with about 6 or 8 pinnae, each usually with 9-11 or more leaflets, the leaflets oval or oval-oblong, obtuse at both ends or the base subacute, up to 4.5 cm. long and 3 cm. wide, glabrous, the petiolules about 2 mm. long. Flowers small, greenish-white, short-pedicellate, in slender, spikelike, pedunculate, racemose clusters up to 15 cm. or more long, fragrant; pods up to 25 cm. or more long and 2 cm. wide, falcately curved, becoming spirally twisted upon opening, the seeds lens-shaped, bright red, shining, very uniform in size, ornamental.

Tongatapu: near village of Niutoua, Mar. 2, 1953, *Yuncker 15113.*

'Eua: along roadside near Houma village, Mar. 26, 1953, *Yuncker 15510.*

Niuafo'ou: behind Futu, Jan. 7, 1952, *Hürlimann 655.*

Occasional in or near villages throughout Tonga. An Indian species now pantropic in cultivation.

Tongan name: *loʻa.*

The wood is durable and used in handicraft work; the seeds, as beads for ornamentation.

Genus **Entada** Adanson

Entada phaseoloides (Linnaeus) Merrill, Philippine Jour. Sci. 9C: 86, 1914.

Stout, glabrous, woody vine, climbing high in forest trees. Leaves alternate, even-pinnate, leaflets glossy, commonly four, asymmetrically oval-ovate, blunt or acute, obtuse or cordulate at base, up to 10 cm. long and 5 cm. wide but mostly smaller, venulose, petiolules up to 5 mm. long. Flowers very small, greenish, in long, axillary, short-pedunculate spikes up to 30 cm. long; pod very large, woody, up to 1 m. long and 10 cm. wide, seeds lens-shaped, brown, 3 cm. or more in diameter.

Tongatapu: near coast north of Fatai, Oct. 30, 1951, *Hürlimann 61;* climbing high in tree, along road between Lavengatonga village and sea, Mar. 7, 1953, *Yuncker 15188.*

'Eua: *Lister;* central valley between Pangai and Fuai, Nov. 10, 1951, *Hürlimann 230;* margin of forest near center of island, Mar. 18, 1953, *Yuncker 15324.*

Vava'u: *Crosby;* summit of Talau, west of Neiafu, May 24, 1953, *Yuncker 16156.*

Niuafo'ou: in thicket in interlava "island" on way to upper rim of main crater, May 16, 1953, *Yuncker 16006.*

Frequent in forested areas throughout Tonga. From Africa to southeastern Asia and Polynesia.

E. scandens Benth. in Hemsley's and Burkill's lists. See Johnson (Sargentia 8: 136-137, 1949) for an interesting discussion of this species.

Tongan names: *talai, faʻanga, lau faʻanga.*

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

137 *flora*, the new species differs in the somewhat more prominent venation of its leaflets and in its more compact inflorescences, with the rachis and pedicels at anthesis being only about half as long (these parts in Gray's species being about 3 cm. and 2-2.5 cm. long respectively). The sepals of our species are slightly the shorter, as are the petals, filaments, and style (in *M. grandiflora* the petals are 12-19 × 3-4 mm., the filaments are 15-25 mm. long, and the style is 9-10 mm. long). Although in foliage, *M. amicorum* is essentially similar to *M. brevipes*, the venation of the leaflets is finer and more obviously prominulous beneath. The new species is further distinguished by having its bud-enclosing bracts sericeous-puberulent rather than glabrous dorsally, in the longer rachis of its inflorescence (about 1 cm. long in *M. brevipes*), in its shorter style, and in the larger bracts, both median and lateral, subtending the flowers.

Genus Tamarindus Linnaeus

Tamarindus indica Linnaeus, Sp. Pl., 34, 1753.

Medium to large, thickly branched, round-topped tree. Leaves alternate, even-pinnate, leaflets up to 36 or more on each pinna, opposite, oblong, obtuse or slightly emarginate, base obliquely inequilateral, about 2 cm. long and 5 mm. wide, sessile. Flowers yellow, striped with red, in axillary or terminal, racemose clusters; pods up to 12 cm. or more long, curved, seeds several, embedded in pulpy tissue.

Tongatapu: margin of coconut plantation below Nualei village, Mar. 9, 1953, *Yuncker 15237*.

Lifuka: northern margin of Pangai village, May 11, 1953, *Yuncker 15987*.

Vava'u: *Crosby*.

Occasional in villages. An African species now of wide distribution in tropical countries.

Tongan name: *tamaline*.

[262] [824] The pulpy part of the pod is edible.

Genus Intsia Thouars

Intsia bijuga (Colebrooke) O. Kuntze, Rev. Gen. Pl. 1: 192, 1891.

Rather large tree. Leaves alternate, even-pinnate, leaflets four, oval-ovate, obtuse or emarginate, base oblique, up to 8 or 10 cm. long and 5-7 cm. wide, glabrous, finely pinnately nerved, petiolules about 5 mm. long. Flowers about 1 cm. long, calyx puberulent, only one petal developing, petal pinkish, rounded; pod up to 20 cm. long and 6 cm. wide, coriaceous, seeds orbicular.

Kao: margin of forest near abandoned plantation, alt. about 30 m., May 6, 1953, *Yuncker 15957*.

Rare in Tonga. From Madagascar through Malaya and from the Philippines and the Caroline Islands eastward to Fiji and Samoa.

Tongan name: *fehi*.

[313] [824] [322] The wood is very hard and is used in handicraft work.

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

Fuai plantation. Mar. 19, 1953, *Yuncker 15353;* on limestone cliff facing sea near summit of eastern ridge, Lokupo district, Apr. 8, 1953, *Yuncker 15674;* near eastern ridge cliff, alt. 220 m., Nov. 9, 1951, *Hürlimann 202.* 137

Kao: in open forest on lower slope, May 6, 1953, *Yuncker 15971.*

Vava'u: *Barclay; Crosby; MacDaniels;* in thicket on cliff near sea below Houma village. May 22, 1953, *Yuncker 16126.*

Frequent throughout Tonga. Limited to Fiji and Tonga.

Tongan names: *ahivao, takafalu'uli.*

Genus **Melia** Linnaeus

Melia azedarach Linnaeus, Sp. Pl., 384, 1753.

Small tree. Leaves alternate, twice-pinnate, leaflets ovate, acuminate, base acute, serrate, opposite, up to 5 cm. or more long, glabrous. Flowers numerous, small, in loose axillary panicles, fragrant, showy, corolla violet or lavender; fruit fleshy, subglobose, yellow, about 1.5 cm. in diameter.

'Eua: *Lister;* grove east of road between villages of Pangai and Ohonua, Apr. 2, 1953, *Yuncker 15631.*

Vava'u: *Crosby.*

Presumably introduced as an ornamental but occasionally adventive. A Chinese species widely planted in warm countries.

Tongan name: *sita.*

The wood is of some use for handicraft work.

[313] [322] [824]

Genus **Dysoxylum** Blume

Dysoxylum forsteri (Jussieu) C. de Candolle, in DC. Monogr. Phanerog. 1: 507, 1878.

Tree, up to 10 m. or more tall, young growth puberulent glabrescent. Leaves alternate, even-pinnate, up to 50 cm. or more long, leaflets oblong-elliptic or elliptic-lanceolate, acuminate, base inequilaterally oblique, up to 12 cm. long and 4-5 cm. wide, petiolules 2-3 mm. long. Flowers mostly less than 1 cm. long, sessile or short-pedicellate, in compound, racemose, axillary clusters, peduncle finely pubescent; fruit subglobose, about 2 cm. in diameter, brown with whitish scurfy patches.

Tongatapu: *Graeffe; Setchell and Parks; MacDaniels;* open forest near village of Niutoua, Mar. 2, 1953, *Yuncker 15117.*

'Eua: *Parks;* open forested area on seaward side of main road between villages of Pangai and Ohonua, Apr. 2, 1953, *Yuncker 15632.*

Nomuka: clearing on lakeward side of road encircling island, Apr. 30, 1953, *Yuncker 15860.*

Vava'u: *Barclay; Crosby;* about 1 mile along road leading to coastal cliff above Ha'alaufuli, May 21, 1953, *Yuncker 16111.*

Frequent throughout Tonga in open forested areas. Also in Niue.

D. richii (A. Gr.) DC. *sensu* Hemsley's list and Yuncker (B. P. Bishop Mus., Bull. 178: 71, 1943), not DC.

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

137 278 757 396 415 313 824

Tongan name: *mo'ota.*

The plant parts when crushed have a somewhat disagreeable odor said to resemble that of fruit bats (flying foxes). The leaves are used medicinally and an extract of the leaves is used for wetting tapas to cover the body "in cases of weakness." The wood is used in making canoes and banana shooks and for general building purposes.

Dysoxylum tongense A. C. Smith, U.S. Nat. Herb., Contrib. 30: 509, 1952.

Large tree, up to 10 m. or more tall, branchlets stout and with large, rounded leaf scars. Leaves even-pinnate, up to 25 cm. or more long, leaflets elliptic-ovate, acute, base obliquely inequilateral, up to 15 cm. long and 8 cm. wide, glabrous, pinnately nerved, petiolules about 1 cm. long. Flowers small, sessile, in axillary, paniculate clusters up to 12-14 cm. long, parts of inflorescence puberulent, corolla greenish white.

'Eua: *Parks;* in forest above Fuai plantation, Mar. 18, 1953, *Yuncker 15316;* edge of forest near center of island, Mar. 18, 1953, *Yuncker 15336;* Mar. 19, 1953, *Yuncker 15366;* Apr. 7, 1953, *Yuncker 15662.*

So far as I know, this species is restricted to 'Eua Island above about 100 m. altitude.

Tongan name: *mo'ota kulo.*

313 322 824

The wood is used in handicraft work.

Genus **Aglaia** Loureiro

Aglaia heterotricha A. C. Smith, U.S. Nat. Herb., Contrib. 30: 486, 1952.

Tree with slender branches, branchlets, petioles, and lower leaflet surface scaly-hairy. Leaves odd-pinnate, leaflets seven, elliptic, up to 25 cm. long and 10 cm. wide, obtuse, base obtuse or acute, petiolules up to 17 mm. or more long, petiole 15-20 cm. long, conspicuously swollen at base. Flowers about 2 mm. long, on slender, short pedicels, in freely branched, axillary, paniculate clusters, the stamen filaments united into a pilose tube.

'Eua: central plateau, June or July 1926, *Parks 16305,* type collection. Known only from 'Eua.

Aglaia saltatorum A. C. Smith, U.S. Nat. Herb., Contrib. 30: 483, 1952.

Shrub or tree, up to 10 m. tall, twigs and young parts pubescent, hairs brown, stellate. Leaves odd-pinnate, leaflets mostly seven, essentially opposite, elliptic or oblong-elliptic, apex acute or rounded, base inequilateral, obtuse or acute, up to 15 cm. long and 8 cm. wide, pinnately nerved. Flowers small, about 2 mm. long, numerous, in rather large, axillary, paniculate clusters; fruit subglobose or ellipsoidal, about 2 cm. long, brown, stellately pubescent.

Tongatapu: *Setchell and Parks; McKern;* in seaside forest below village of Niutoua, Mar. 2, 1953, *Yuncker 15138.*

'Eua: in rich forest above Fuai plantation, Mar. 18, 1953, *Yuncker 15313.*

Nomuka: above village in clearing near sea, Apr. 30, 1953, *Yuncker 15857.*

Lifuka: along road north of Pangai village, Apr. 25, 1953, *Yuncker 15738.*

Vava'u: *Crosby.*

Niuatoputapu: on coral soil near dwelling, Jan. 2, 1952, *Hürlimann 649.*

1 /Dysoxylum forsteri -- Analyst/

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

137 'Eua: *Parks 16262* [cited by Croizat]; forested area near center of island, Mar. 18, 1953, *Yuncker 15322.*

Infrequent. Also in Fiji.

Genus **Macaranga** Thouars

Macaranga harveyana (Mueller-Argoviensis) Mueller-Argoviensis, in DC. Prodr. 15(2): 998, 1866.

Small, soft-wooded, dioecious tree, up to 8 m. or more tall, branchlets stout, pithy. Leaves alternate, peltate, round-ovate, acuminate, very shallowly toothed or entire, paler and golden glandular-dotted beneath, about eight-nerved from petiole, midrib branched upward, up to 20 cm. or more long and 18 cm. wide, commonly somewhat smaller, petioles up to 15 cm. or more long, stipules lanceolate, long-acuminate, up to 2 cm. long. Flowers small, in axillary, paniculate-racemose clusters; fruit depressed-globose, soft-spiny, about 1 cm. in diameter.

Tongatapu: *Moseley;* thicket along road near Vaini village, Feb. 26, 1953, *Yuncker 15053* (male), *15065* (female).

'Eua: *Lister;* margin of old plantation between Pangai village and Fuai, Mar. 25, 1953, *Yuncker 15482.*

Lifuka: thicket near northern end of island near Lifuka end of interisland causeway, May 11, 1953, *Yuncker 15980.*

Kao: lower margin of forest near old plantation, May 6, 1953, *Yuncker 15960.*

Vava'u: *Crosby;* in clearing on slope above the lagoon at Vaihoi, May 26, 1953, *Yuncker 16200.*

Tafahi: forest along path to Piu 'o Tafahi, alt. 150 m., Dec. 10, 1951, *Hürlimann 406.*

Frequent throughout Tonga. Fiji, Niue, and Samoa to the Society Islands.

Tongan name: *loupata.*

313 342 322 415 The timber is used for house construction, handicraft work, banana shooks, and other purposes; the leaves, for covering *umu* (ovens), for wrapping fish, and in medicines used for stomach disorders in infants.

251 278 854 824 **Macaranga seemannii** (Mueller-Argoviensis) Mueller-Argoviensis, in DC. Prodr. 15(2): 999, 1866.

Tree up to 18 m. tall, branchlets and petioles subglabrous. Leaves alternate, broadly ovate, long-acuminate, base rounded, peltate 2.5-7.5 cm. from margin, six- to eight-nerved from petiole, glandular beneath, nerves beneath puberulent, up to 30 cm. long and 22 cm. wide but commonly somewhat smaller, petiole up to 18 cm. long, stipules oblong-lanceolate, up to 4 cm. long and 1 cm. wide. Flowers small, in axillary, paniculate clusters up to 12 cm. long; fruit smooth, glandular.

Tongatapu: *Cook; U.S. Expl. Exped.*

Infrequent. Also in Fiji.

92: Kaeppler E-4 (1964-1967) 1971
OU9 Tonga OU9

one of the natives sold a very small nail carefully fastened in a handle of hard wood, and tied to it by strings of coconut-core. This nail was undoubtedly left by Tasman, who was there in 1643, and consequently had been preserved 130 years, and is now lodged amongst other curiosities in the British Museum' (1778: 368). Perhaps there is such an implement in the British Museum with a nail lodged in hard wood; however, they have no record of it. The Pitt Rivers specimen has a handle of bone—a perceived Tongan alternative which probably indicated that its use was restricted to the higher ranks as we have also seen in the bone and wood handles of fly whisks (i.e., Bern and Pitt Rivers specimens). It is certainly possible that there were at least two such hafted nail implements, for Cook discovers on his third voyage, that,

> on my enquireing of Fattafee the King how they came by the Knowledge of iron and a small iron tool I saw here last Voyage, he told me it came from Onnuahtabutabu [Niuatoputapu], and on asking him how the people of that island came by it, he said one of them sold a Club for five Nails to a Ship which came to the island [Wallis in 1767], and that these five Nails after wards came to Tongatabu and were the first they had seen, so that the Iron they got from Captain Tasman must have been worn out and forgot long ago (Beaglehole 1967: 162).

Two implements almost identical to the Forster shark-tooth example exist in Dublin and another in Vienna. The Vienna specimen was noted in the first inventory of the collection as an engraving instrument from Tonga (Moschner 1955: 139), and has a bark cloth padding under the sennit binding—a very Tongan way of hafting, also used for the hafting of adzes. Finally, yet another specimen is engraved in Labillardière (1802: plate 32) with a very good accompanying description:

> we saw several [Tongans] who were employed in carving others [clubs] with shark's teeth fixed into the extremity of a piece of wood. We were astonished to see them quickly notch, with this sort of chisel, *casuarina* wood, notwithstanding its extreme hardness. Others already used with much dexterity some of the iron instruments which we had given them (1802: 147–8).

In this case there is no possibility of confusion with Tahiti, for Labillardière did not go to Tahiti.

One specimen in the Pitt Rivers Museum (plate 5a)[A] appeared at first to be not Tongan at all and its use was even more mysterious—a large thin plate of whalebone with the edges curved and having three holes at one edge and labelled Number 62. Before the original Forster catalogue was found, it was labelled New Zealand. The *Catalogue*, however, lists Number 62 as 'a Shield made of Bone, probably of a cetaceous animal', and is designated as Tongan. In George Forster's account of the voyage we find the description and collection information: 'we bought a large flat shield or breast-plate, of a roundish bone, white and polished like ivory, about eighteen inches in diameter, which appeared to have belonged to an animal of the cetaceous tribe' (1777: 455). The Pitt Rivers specimen measures 18 inches and an almost indentical specimen exists in the Forster collection in Göttingen. There is also a larger and thinner one in the British Museum (no accession information or provenance). How or when these specimens were used, we are unfortunately not told. One could suggest, however, that this is a large and ostentatious rendering of a shell breast ornament in whale bone, which was a material of high status. The

A. [See End Plate 5, following p. 220--Analyst]

/99 cont./

276 [171] and Fiji, for example, where this custom has also been preserved. Kava is, without reservation, the essential element of community life in Tonga.

[249] [438] Kava (Piper methysticum) is still planted on all Tongan islands However, on a few it is scarce (as a result of reduced planting, too great consumption or destruction by pits), and the kava roots are obtained from other islands of the Archipelago, often by the bag, at five AT a bag (approximately 47 German marks), or are bought by the piece in (retail) shops in the village. When people want to drink kava they take a few roots and go to a house in the village that seems appropriate (with regard to owner and space) and ask if kava might be made. Or, if one or several friends happen to be in a person's house, its preparation is immediately begun, generally /100/ by a young girl (or a woman), more seldom by a man. This girl pounds the root between stones (maka toto lalo and maka toka 'olunga) over a mat (fala tuki kava) and pours the coarse flour thus obtained into the kava bowl (kumete kava). The bowl is the most important piece [415] of property of every household; it is artistically carved out of a [322] block of wood and has a diameter up to one meter and four to sixteen [439] /sic/ feet. Many of these bowls come from Fiji, but they are also made in Tonga on most of the islands, chiefly on 'Eua. As needed [415] (depending on the quantity of kava meal), water dipped from a zinc bucket standing in readiness is ladled out with a coconut shell (ipu kava) and poured onto the meal in the bowl. The meal is kneaded in the water. Then with a bundle of bast (fau tau kava) (from fau = Hibiscus tiliaceus) they take the remnants of kava out of the liquid, wring out the bundle with a firm grip over the bowl and shake the squeezed-out residue (which, after drying, is sometimes used a second time) onto the mat. With the bast bundle a portion of the now finished kava drink is taken out of the bowl and the coconut cup

/136 cont./

412 into the coconut-palm pieces of trunk with the fale-vatu lahi in order
[342] to make the rafters (kahoki) (see below). This transverse hatchet--
[335] with the same shape and shaft--also occurs in a smaller version known
[322] as fale-vatu si'i, and is used preferably to "plane" the rafters (chip off unevenness). The toki taha-taha and the toki tele are used for the same purpose. The smaller hatchets (handle length about 30
412 centimeters) have European planing blades, again mounted crosswise,
177 with the cutting edge fastened to a forked branch with a kafa lashing.
284 Here too the handle usually consists of feta'u wood. In the case of
824 the toki tele are used for the same purpose. The smaller hatchets (handle length about 30 centimeters) have European planing blades, again mounted crosswise, with the cutting edge fastened to a forked branch with a kafa lashing. Here too the handle usually consists of feta'u wood. In the case of the toki tele, parts of a coconut husk are used as a blade cover. Another small transverse hatchet (handle length 25 centimeters), the toki unga ko, may be mentioned. Here a European gouge approximately 20 centimeters long with its curvature resting on an insert of toa wood is attached with a kafa lashing to a feta'u forked branch. Owing to the insert, this blade can be turned and thus makes possible various semicircular cuts.

The transverse hatchets mentioned here are often also bound with wire (or hemp) instead of the coconut-fiber cords.

412 These transverse hatchets are an interesting fusion of ancient
177 Tongan and European tools: the natives have generally replaced their stone blades /137/ with the various more efficient metal blades, but have retained the old Tongan type of shaft so that they can use the new tool for their traditional working methods (see below). (366)

366. The transverse hatchets are used not only in house-building, but also in woodwork generally (for example, boat-building, see p. 351-353).